

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2, and 4-21 are pending in the present application. Claim 3 has been canceled without prejudice or disclaimer. Claims 1, 6, 13, and 16-19 have been amended, and Claim 21 has been added by the present amendment without the introduction of any new matter.

In this last regard, Claim 1 has been combined with the subject matter of Claim 3 to effectively present Claim 3 in independent form, and Claim 3 has been canceled. In addition, the previous Claim 1 recital of “an output current” of “a comparison circuit” has been changed to --an output signal--. This change to Claim 1 has been made in consideration of the description “an output voltage AMPOUT” on, for example, line 23 of page 11 of the specification, in which output is represented in terms of voltage, not current.

Claim 6 has been amended to clarify that the comparison circuit of Claim 1 is being referenced. A similar amendment has been made to clarify Claim 13 relative to the comparison circuit recited by Claim 9.

Claim 16 has been amended to clarify the order of the structural elements and terms have been simplified to make Claim 16 clearer. Claim 17 has been amended to be consistent with the changes made to Claim 16.

Claims 18 and 19 have been amended to avoid the language questioned in the outstanding Action while clarifying that the increase/decrease of the control signal follows that of the output signal from the amplification circuit. This amendment is supported by the description on lines 14–24 of page 26 of the specification.

Finally, new Claim 21 is presented as a combination of the subject matter of original Claim 2 with that of original Claim 1.

In the outstanding Office Action, Claims 6-8 were objected to, Claims 6-8 and 16-20 were rejected under the second paragraph of 35 U.S.C. §112; Claims 1 and 2 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,121,913 to Glass et al. (herein "Glass"); Claims 1, 2 and 6-8 were rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,320,435 to Tanimoto; Claims 1, 2 and 6-8 were rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,773,999 to Park et al. (herein "Park") and Claims 4 and 5 were rejected under 35 U.S.C. §103(a) as unpatentable over Glass in view of U.S. Patent No. 6,563,319 to Kraz.

Applicants thank the Examiner for the indication that Claims 9-15 have been allowed and that Claim 3 would be allowed if rewritten as indicated in the outstanding Action. Applicants further acknowledge with gratitude the indication of allowable subject matter as to Claims 16-20 that predicates allowance of these claims on overcoming the rejection thereof under the second paragraph of 35 U.S.C. §112 and the rewriting thereof in the manner indicated in the outstanding Action.

Turning first to the formal matters of the objection to Claims 6-8 and the rejection of Claims 6-8 and 16-20 under the second paragraph of 35 U.S.C. §112, it is noted that Claim 6 has been amended to clarify that the comparison circuit of Claim 1 is being referenced. Clearly, Claim 6 now further limits the subject matter of Claim 1 and the objection to Claim 6 should be withdrawn as should the rejection thereof under the second paragraph of 35 U.S.C. §112 as being misdescriptive.

As Claims 7 and 8 were apparently included in the objection and rejection under the second paragraph of 35 U.S.C. §112 because of their dependency from Claim 6, it is believed that the objection thereto and the second paragraph of 35 U.S.C. §112 rejection thereof should be withdrawn along with those applied to parent Claim 6 for the reasons noted above.

Parent Claim 16 (from which Claims 17-19 depend) corresponds to FIG. 3. As mentioned above, parent Claim 16 has been amended by changing the order of the recited structural elements and simplifying the terms used. Therefore, as parent Claim 16 can no longer be criticized as to being unclear as to which drawing the claimed circuit reads on, it is believed that the rejection of parent Claim 16 under the second paragraph of 35 U.S.C. §112 has been overcome.

Furthermore, as dependent Claim 17 was not separately questioned and as dependent Claims 18 and 19 have been amended to avoid the language questioned in the outstanding Action while clarifying that the increase/decrease of the control signal follows that of the output signal from the amplification circuit, as mentioned above, the rejections of dependent Claims 17-19 are also believed to have been overcome.

If the Examiner disagrees that the present amendments to Claims 6 and 16-18 are adequate to overcome the formal objection raised as to Claims 6-8 (based upon Claim 6) or the formal criticisms raised as to Claims 16-19 under the second paragraph of 35 U.S.C. §112, the Examiner is invited to contact applicants representative at the below noted telephone number so that mutually agreeable changes to solve any outstanding formal matters can be determined.

With further regard to the rejection of Claim 1 under 35 U.S.C. 102(b) as being anticipated by any of Glass, Tanimoto or Park, the amendment to Claim 1 to incorporate the subject matter of Claim 3 into Claim 1 to in effect rewrite Claim 3 in independent form, as fully discussed above, is believed to overcome these rejections as the outstanding Action admits that these references do not teach or suggest this Claim 3 subject matter. Accordingly, allowance of Claim 1 along with the withdrawal of the present rejections applied to this claim is believed to be in order.

In addition, as Claims 2 and Claims 4 and 5 all depend from what should now be considered to be allowable Claim 1, and as Kraz also does not teach or suggest the subject matter of Claim 3 that has been incorporated into Claim 1, the allowance of Claims 2 and Claims 4 and 5 along with the allowance of parent Claim 1 is further believed to be in order along with the withdrawal of the present rejections applied to these claims.

In addition, as Claims 6-8 also ultimately depend on Claim 1 and define over any of Glass, Tanimoto or Park, at least for the reasons Claim 1 does, and as the rejection of these claims under the second paragraph of 35 U.S.C. §112 is believed to be overcome for the reasons set forth above, allowance of Claims 6-8 is also believed to be in order.

With further regard to new Claim 21, this claim is a combination of the subject matter of original Claims 1 and 2, as noted above. Contrary to the suggestion in the outstanding Action, none of Glass, Tanimoto or Park is believed to anticipate this subject matter for the following reasons.

FIG. 1 of Glass illustrates a schematic circuit diagram of a voltage to current converter. The outstanding Action indicates that the inputs to the voltage/current conversion circuit are differential signals and reference signals. However, Applicants believe that this interpretation is incorrect and not consistent with the actual teachings of Glass because if the voltage/current conversion circuits (1, 11) are to be said to correspond to first and second voltage/current conversion circuits, the inputs to the first voltage/current conversion circuit 1 are shown to be V_{IN} and V_{REF} , which are reference voltages and not the differential inputs that the added subject matter from Claim 2 requires. Similarly, the inputs to the second voltage/current conversion circuit 11 are shown to be voltages V_{REF} and V_{UNIT} . These voltages are also believed to be reference voltages because the voltage/current conversion circuit 11 is used to generate a unit current or multiples thereof (see column 2, lines 42–52).

Accordingly, it is believed to be clear that Glass cannot be said to teach or suggest the subject matter of new Claim 21 that incorporates the requirement of Claim 2 that the inputted signal is "a differential signal.

The outstanding Action (at page 4) also incorrectly interprets the two inputs of the first voltage/current conversion circuit 13A of Tanimoto as being "differential input signals." Moreover, a reference voltage signal that includes two reference voltages is also not taught or suggested by Tanimoto to be input to the second voltage/current conversion circuit 13B, contrary to the requirements of original Claim 2 now incorporated into new Claim 21.

Accordingly, Tanimoto cannot be said to teach or suggest the subject matter of new Claim 21.

Turning to Park, it is noted that page 4 of the outstanding Action has suggested that FIG. 3 of Park teaches first and second voltage/current conversion circuits (MP1, MN1) and a junction node serving as a comparison circuit.

However, it is clear that MP1 and MN1 are turned on/off one at a time, as the outstanding Action has indicated with regard to Claims 7 and 8. Thus, either MP1 is turned on and the output DOUT becomes high (Vcc) or MN1 is turned on and the output DOUT becomes low (Vss). See Park at col. 6, lines 46-47 and 61-62, for example. Thus, there is no comparison circuit at the junction node, just alternative high (Vcc) or low (Vss) voltages that cannot be simultaneously present to be in any way compared.

Therefore, Park clearly does not teach or suggest the subject matter of new Claim 21.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for formal allowance and an early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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